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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/510,861

02/23/2000

Koichi Tamura

13392

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23389

7590

01/19/2006

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EXAMINER

KIM, KEVIN

ART UNIT

PAPER NUMBER

2638

DATE MAILED: 01/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/510,861	TAMURA, KOICHI	
	<b>Examiner</b>	<b>Art Unit</b>	
	Kevin Y. Kim	2638	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 November 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 3,4,6-8,11-14,17,18,20-22 and 25-28 is/are pending in the application.
- 4a) Of the above claim(s) 11-14 and 25-28 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6-8 and 20-22 is/are allowed.
- 6) ☒ Claim(s) 3,4,17,18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed November 10, 2005 have been fully considered but they are not persuasive.

Applicant attempt to differentiate the claimed invention from what is disclosed in the Fujii patent in the invention "the frequency is kept constant." However, since this feature is not specifically cited, the argument is irrelevant. Next, applicant challenges the examiner's observation that the automatic frequency control, such as described by Fujii patent, is functionally equivalent to the phase shifter, as claimed because "this equivalency, however, was not known." Thus, applicant continues that the rejection is based on hindsight. In response to this argument, a prior art reference is hereby provided showing that an AFC functions such that the phase of a received signal is varied until the local oscillator is identical to the carrier frequency of the received signal. Ogura et al (US 5,287,388). Col. 1, lines 20-32. Although the ground of rejection is essentially the same, the Office action is made non-final in light that a new prior art reference is provided to substantiate the examiner's assertion of the equivalency between an AFC and a phase shifter.

It is reminded that the withdrawn claims must be expressly cancelled before the application is allowed if any of the elected claims are found patentable.

### ***Claim Rejections - 35 USC § 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

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3. Claims 3 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujii (previously cited) in view of Ogura et al (US 5,287,388).

Claim 3.

Fujii teaches a demodulation circuit (250, 270 through 157, 158 to 210 in Fig. 1) for demodulating a digital transmission signal having improved power consumption for an A/D converting means further comprises orthogonal demodulating means (156 in Fig. 1) for performing orthogonal demodulation of said digital transmission signal;

said A/D converting means includes two A/D converters (157, 158 in Fig. 1) for two base band signals demodulated by the orthogonal demodulation means;

symbol judgment portion (213 in Fig. 1) for making judgment of symbols of digital signals output from the A/D converters;

automatic frequency controlling (AFC) means including P/S converter (214 in Fig. 1) for converting the output signal of the symbol judgment portion, comparing portion (230 in Fig. 1, note that 230 is a unique word (UW) detector) for comparing the known signal extracted from the output signal of the P/S converter with the known signal inserted at the transmitting end, and a controller (220 in Fig. 1) for repeatedly controlling the frequency of a local oscillator (VCO 164 in Fig. 1) before digital conversion by said A/D converting means on the basis of a result of comparison by the comparing portion (220 in Fig. 1 ; note that, as shown in Fig. 1, the controller 220 sends a control signal to the VCO 164, which in turn controls the phase of the demodulators 270, 280 and 156, also note that the phase is controlled or adjusted before the A/D converting means).

Fujii is silent as to the aspect of the varying phase shift as a result of the automatic frequency control. Ogura et al describes that the automatic frequency control is performed in response to the phase difference between the oscillator and the received signal and the oscillator is controlled such that the frequencies of the oscillator and the received signal are identical to each other, i.e., until there is no phase difference. This description implicitly teaches that the phase of the received signal is repeatedly varied as a result of the automatic frequency control. At the least, Ogura et al teaches desirability of reducing the phase difference between the oscillator and the received signal.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to vary the phase shift of the based band signal, if not already achieved by the AFC, for the purpose of synchronizing the oscillator signal (164) and the received signal as taught by Ogura et al.

Claim 17 is the corresponding method claim of claim 3, and is therefore rejected for the same reason above.

4. Claims 4 and 18 rejected under 35 U.S.C. 103(a) as being unpatentable over Fujii in view of Ogura et al, as applied to claims 3 and 17 above respectively, and further in view of Miya et al (previously cited).

Fujii in view of Ogura et al teaches all the claimed subject matter, as explained above, but does not teach reception data processing portion obtaining an information data by removing the known signal.

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Miya teaches a frame decomposition circuit (124 in Fig. 1) that reproduces the information by removing the unique word (col. 6, lines 28-32). It is known that the unique word does not contain any information and is generally only used for synchronization purpose. It is therefore required to remove the unique word from the received signal in order to obtain the information. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a reception data processing portion that removes the known signal to obtain the information data, since the known signal does not contain any information.

***Allowable Subject Matter***

5. Claims 6-8, 20-22 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y. Kim whose telephone number is 571-272-3039. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
KEVIN KIM  
PATENT EXAMINER